Advanced Selection

When working in Edit Mode there are many more ways of selecting elements than are available in Object Mode. In the next few pages we'll see most of the new methods available. In *Vertex Selection mode*, when working on a circular object such as a sphere, cylinder or cone, holding down the **Alt** key when clicking slightly to the left or right of an appropriate vertex will select a complete horizontal circle of vertices. This is known a **loop select** operation.



However, if we hold down **Alt** and click slightly above or below a vertex, we select only half a vertical circle.

The reason why we only get half a circle is because Blender can only perform a complete loop select when the faces involved are quads. So the tris at the top and bottom of a sphere prevent it from selecting a full loop.



However, we can complete the vertical loop by holding down **Shift** and **Alt** to repeat the previous operation on the other side of the sphere.



Loop selects also works on the perimeter of holes in a mesh (assuming quads faces) but not on the whole perimeter.







When in *Edge Select mode*, another circle selection method is open to us. By holding down both **Ctrl** and **Alt** while clicking on a vertical Edge, we select a set of Edges parallel to the first. Blender refers to this circle of parallel Edges as a **ring**.



In *Face Select mode*, **Alt**+click will select either a complete horizontal circle (click in the left or right areas of the Face) or half a vertical circle (click in the top or bottom areas of the Face).

Using the same combination and clicking on a horizontal Edge, selects a half ring of Edges on the sphere.



*Loop select* also works on other shapes, but will stop at any non-quad Faces or at a boundary.







In a complex model there will often be several meshes. We saw in the previous chapter that meshes could be linked together using **Ctrl+J**. When we do this, the meshes within a model (individual meshes are known as **islands**) can still be selected separately by moving the mouse pointer over any part of the required mesh and then pressing **L**. Below we can see Suzanne where the head, left eye, and right eye are each separate meshes.



![](_page_5_Figure_0.jpeg)

![](_page_6_Figure_0.jpeg)

To better understand each option in the *Last Op* panel, we'll use an edited Suzanne mesh as shown from two different angles below. Note that front faces are shown in blue and backfaces in red.

![](_page_7_Picture_1.jpeg)

The first entry in the *Last Op* panel is **Extend** which simply adds the latest selection to the previous selection. Other options are shown below. All but the last image were taken while working in *Edge select* mode.

![](_page_7_Figure_3.jpeg)

![](_page_8_Picture_0.jpeg)

![](_page_9_Figure_0.jpeg)

![](_page_9_Figure_1.jpeg)

Now that we understand vertex groups, we can see the point of the last submenu entry, **Ungrouped Vertices**, which selects all vertices that do not belong to a named vertex group. This option is only available when at least one named group exists.

![](_page_9_Figure_3.jpeg)

**Linked** selects all elements that are directly or indirectly linked to the initially selected element.

![](_page_9_Picture_5.jpeg)

The next entry in the Select menu is **Select Linked**. This has its own submenu with three entries.

<u>L</u> asso Select	►	
Select Mirror Select <u>R</u> andom Checker Deselect	Shift Ctrl M	
More/Less	►	
Select Similar Select All by Trait	Shift G►	
Select Lin <u>k</u> ed	<u>ب</u>	Linked Ctrl L
Select Loo <u>p</u> s	•	<u>S</u> hortest Path
Sharp <u>E</u> dges Side <u>o</u> f Active		Linked Elat Faces
By Attribute		

The *Last Op panel* allows us to exclude elements which would normally be selected. For example, by activating the **Material** button, any face which has been assigned a different material from the originally selected element, will be deselected.

![](_page_9_Picture_9.jpeg)

![](_page_9_Picture_10.jpeg)

**Shortest Path** creates the same result achieved when holding down the **Ctrl** key when selecting a second element in a mesh. It selects the elements that form the shortest path between the initial and last selection.

**Linked Flat Faces** selects the single group of faces that lie on the same plane as the initial selection. Faces on the same plane, but that would form a separate selection group are not selected.

![](_page_10_Figure_2.jpeg)

**Edge Loops** selection is not too different from results we got from the keyboard shortcuts we looked at the start of this section. If we start by selecting a single Edge, then this option will select (as far as possible) the associated loop of Edges.

![](_page_10_Figure_4.jpeg)

![](_page_11_Figure_0.jpeg)

Select Loop Inner-Region selects all of the elements with a defined boundary. The Last Op panel has a Select Bigger checkbox which changes the selection to all the elements outside the bound region.
Select

![](_page_11_Figure_2.jpeg)

**Select Boundary Loop** selects the Edges (or Vertices if in *Vertex select* mode) around the edge of the selected area. In other words, the reverse of Select Loop Inner-Region. Note if working in *Face select* mode, the operation will cause a switch to *Edge select* mode.

![](_page_11_Figure_4.jpeg)

submenu entry

is Edge Rings

![](_page_11_Figure_5.jpeg)

**Sharp Edges** is the next entry in the Select menu. This option selects all those Edges in a mesh that share faces that are at more than 30° to each other.

![](_page_11_Figure_7.jpeg)

elect	Add	Mesh	Vertex	Edge
<u>A</u> ll				
No	ne			Alt A
<u>I</u> nv	rert			Ctrl I
₿o	k Select		g-Left Mo	
Çir	cle Sele	ct		С
Las	so Sele	ect		
Sel	ect Mirı	or	Shift C	trl M
Sel	ect <u>R</u> an	dom		
Ch	ecker D	eselect		
Mo	re/Less			
Sel	ect Sim	ilar		nift G►
Sel	ect All b	oy <u>T</u> rait		
Sel	ect Link	⊈ed		
Sel	ect Loo	ps		
Sha	arp <u>E</u> dg	es		
Sid	e <u>o</u> f Act	tive		
В <u>у</u>	Attribut	e		

![](_page_12_Picture_0.jpeg)

The **Axis Sign** field has one more option, **Aligned Axis**, which selects those vertices with the same coordinate on the axis specified in the **Axis** field. Below we can see the vertices selected when **Axis** is set to *X*.

![](_page_13_Picture_1.jpeg)

Having arrived at the end of the Select menu's options, we'll backtrack to the previously skipped Select Similar. This has a different submenu for each selection mode. Below we can see the submenu when in *Vertex select* mode.

– Lasso Select	•	
Select Mirror Select <u>R</u> andom Checker <u>D</u> eselect	Shift Ctrl M	
<u>M</u> ore/Less	►	
Select Similar	Shift G►	Normal
Select All by <u>T</u> rait	►	Amount of Adjacent Faces
Select Lin <u>k</u> ed	►	<u>V</u> ertex Groups
Select Loops	•	Amount of Connecting Edges
Sharp <u>E</u> dges		Vertex <u>C</u> rease
Side of Active		Eace Regions
B <u>y</u> Attribute		

The *Last Op* panel, which differs little for every entry in all of the Select Similar submenus offers us three settings.

**Type** is a dropdown list offer all the other options in the submenu except **Face Regions**.

**Compare** is another dropdown list offering *Equal, Greater*, or *Less*.

**Threshold** defines the leeway when Blender performs a **Compare** calculation.

![](_page_13_Picture_8.jpeg)

**Threshold** specifies how much distance leeway is allowed when deciding if a vertex matches the criteria for selection. For example, changing the value in that field to 0.2 changes the result of the previous operation to that shown below.

![](_page_13_Figure_10.jpeg)

**Normal** selects all other vertices whose Vertex normal points in the same direction as that of the initial selection.

![](_page_13_Picture_12.jpeg)

**Amount of Adjacent Faces**, the next submenu option, selects all other vertices that have the same number of connections as the initial selection. Of course, if the *Last Op's Compare* has been adjusted this may be less or more connections.

![](_page_13_Picture_14.jpeg)

![](_page_14_Figure_0.jpeg)

![](_page_15_Picture_0.jpeg)

![](_page_16_Picture_0.jpeg)